Examples of such cements and/or fillers includes bone chips, demineralized bone matrix (DBM), calcium sulfate, coralline hydroxyapatite, biocoral, tricalcium phosphate, calcium phosphate, polymethyl methacrylate (PMMA), biodegradable ceramics, bioactive glasses, hyaluronic acid, lactoferrin, bone morphogenic proteins (BMPs) such as recombinant human bone morphogenetic proteins (rhBMPs), other materials described herein, or combinations thereof.

The agents within these matrices can include any agent disclosed herein or combinations thereof, including radioactive materials; radiopaque materials; cytogenic agents; cytotoxic agents; cytostatic agents; thrombogenic agents, for example polyurethane, cellulose acetate polymer mixed with bismuth trioxide, and ethylene vinyl alcohol; lubricious, hydrophilic materials; phosphor cholene; anti-inflammatory agents, for example non-steroidal anti-inflammatories (NSAIDs) such as cyclooxygenase-1 (COX-1) inhibitors (e.g., acetylsalicylic acid, for example ASPIRIN® from Bayer AG, Leverkusen, Germany; ibuprofen, for example ADVIL® from Wyeth, Collegeville, Pa.; indomethacin; mefenamic acid), COX-2 inhibitors (e.g., VIOXX® from Merck & Co., Inc., Whitehouse Station, N.J.; CELEBREX® from Pharmacia Corp., Peapack, N.J.; COX-1 inhibitors); immunosuppressive agents, for example Sirolimus (RAPAMUNE®, from Wyeth, Collegeville, Pa.), or matrix metalloproteinase (MMP) inhibitors (e.g., tetracycline and tetracycline derivatives) that act early within the pathways of an inflammatory response. Examples of other agents are provided in Walton et al, Inhibition of Prostoglandin E_2 Synthesis in Abdominal Aortic Aneurysms, Circulation, Jul. 6, 1999, 48-54; Tambiah et al, Provocation of Experimental Aortic Inflammation Mediators and Chlamydia Pneumoniae, Brit. J. Surgery 88 (7), 935-940; Franklin et al, Uptake of Tetracycline by Aortic Aneurysm Wall and Its Effect on Inflammation and Proteolysis, Brit. J. Surgery 86 (6), 771-775; Xu et al, Spl Increases Expression of Cyclooxygenase-2 in Hypoxic Vascular Endothelium, J. Biological Chemistry 275 (32) 24583-24589; and Pyo et al, Targeted Gene Disruption of Matrix Metalloproteinase-9 (Gelatinase B) Suppresses Development of Experimental Abdominal Aortic Aneurysms, J. Clinical Investigation 105 (11), 1641-1649 which are all incorporated by reference in their entireties.

Any elements described herein as singular can be pluralized (i.e., anything described as "one" can be more than one). Any species element of a genus element can have the characteristics or elements of any other species element of that genus. The above-described configurations, elements or complete assemblies and methods and their elements for carrying out the invention, and variations of aspects of the invention can be combined and modified with each other in any combination.

I claim:

1. An implantable orthopedic device, comprising:

a first plate, having an outward-facing surface facing away from said device and an inward-facing surface opposed to said outward-facing surface, and having a plate longitudinal direction;

a second plate opposed to said first plate; and

a mechanism located between said first and second plates, said mechanism being capable of causing relative motion of said first and second plates toward or away from each other,

wherein said first plate comprises, on said inward-facing surface of said first plate, a planar ramp surface bounded by two edges that are parallel to each other, said planar ramp surface having a ramp direction that is located midway between said two parallel edges, said ramp direction being inclined at an oblique ramp angle with respect to said plate longitudinal direction,

wherein said planar ramp surface is bounded on respective sides by respective first and second grooves,

wherein said ramp surface and said first and second grooves in combination engage and capture a geometric feature of said mechanism while permitting sliding of said geometric feature relative to said planar ramp surface along said ramp direction,

wherein said first plate has a centrally located first opening therethrough and said second plate has a centrally located second opening therethrough and wherein a window region of space connecting said first opening and said second opening is not crossed by any object extending within said window region continuously from a proximal edge of said window region to a distal edge of said window region, and

wherein the mechanism has a locking reception configuration at a proximal terminal end of the mechanism, the device further comprising a locking element configured to rotate with respect to the first plate and the second plate.

2. The device of claim **1**, wherein each of said grooves has a pair of parallel sides and a planar connecting surface bottom between said two parallel sides.

3. The device of claim **1**, wherein said first groove has a respective groove side not coincident with said planar ramp surface, and said second groove has a respective groove side not coincident with said planar ramp surface, and said respective groove sides are substantially coplanar with each other.

4. The device of claim **1**, wherein one of said grooves has a groove side that is parallel to said planar ramp surface.

5. The device of claim **1**, wherein one of said grooves has a groove side that is substantially perpendicular to said planar ramp surface.

6. The device of claim **1**, wherein said oblique ramp angle direction with respect to said plate longitudinal direction forms a ramp angle in the range of 15 degrees to 75 degrees.

7. The device of claim **1**, wherein said first plate comprises, on said inward-facing surface of said first plate, said planar ramp surface and an additional said planar ramp surface.

8. The device of claim **1**, wherein the locking element is configured to fit into the locking reception configuration such that the locking reception configuration prevents rotation of the locking element.

9. The device of claim **1**, wherein the locking element is completely recessed within the locking reception configuration.

10. The device of claim **1**, wherein the locking element is completely received by the locking reception configuration.

11. The device of claim **1**, wherein the outer surface of the locking element is smooth.

12. An implantable orthopedic device, comprising:

a first plate, having an outward-facing surface facing away from said device and an inward-facing surface opposed to said outward-facing surface, and having a plate longitudinal direction;

a second plate opposed to said first plate; and

a mechanism located between said first and second plates, said mechanism being capable of causing relative motion of said first and second plates toward or away from each other,

wherein said first plate comprises, on said inward-facing surface of said first plate, a planar ramp surface bounded by two edges that are parallel to each other and generally coplanar with said plate longitudinal direction, said planar ramp surface having a ramp direction centerline that